

REMARKS

This application has been reviewed in light of the final Office Action dated August 25, 2005. In view of the foregoing amendments and the following remarks, favorable reconsideration is respectfully requested.

Claims 1-30 are pending. Claims 1, 3, 15, 17, 28 and 30 have been amended. Support for the claim changes can be found in the original disclosure, and therefore no new matter has been added. Claims 1, 15, 28 and 30 are in independent form.

Objections to the Claims and Drawings

In the final Office Action dated August 25, 2005, the drawings were objected to as allegedly not showing every feature of the invention specified in the claims. Specifically, the Examiner alleged that the “status means” and “generating means” recited in Claim 1 and the “instruction[s] input means” and “user interface apparatus according to Claim 1” recited in Claim 14 are not shown in the drawings. Claim 14 was objected to on related grounds. In regard to these objections, the propriety of which is not conceded, Applicants submit the following remarks.

In regard to Claim 1, it is noted that the status means is illustrated, for example, by the machine status monitor 2, and the generating means is illustrated, for example, by the NL generator 3, which are shown in Fig. 1. (The output means is illustrated, for example, by the NL output generator 5, shown in Fig. 1.) Pertinent explanation is provided, for example, in the discussion of Fig. 1 in the specification, at page 6, line 18 to page 7, line 5. The claimed elements are further described and illustrated throughout the rest of the specification and figures.

Further in regard to the Examiner's comments concerning Fig. 1 and Claim 1, it is noted that the "natural language interface" and the "speech interface" (page 6, lines 7-11, of the specification) represent non-exclusive examples of the machine user interface 1 shown in Fig. 1.

In regard to Claim 14, as explained in the Amendment filed on April 27, 2005, the user interface apparatus according to Claim 1 may include all of the elements (functional blocks) shown in Fig. 1. It is noted that the instructions input means is illustrated, for example, by the machine user interface 1 shown in Fig. 1. However, as noted in the specification (page 4, lines 10-11), the interface may be provided in the machine (rather than, or in addition to, being provided in the user interface apparatus).

Thus, it is noted that according to Claim 14, the instructions input means is provided in the machine. (Of course, this does not preclude the user interface apparatus of Claim 14 from being provided with another instructions input means.) Thus, while Claim 14 indicates instructions input means separate from the user interface apparatus, the claimed invention is not limited to the case in which the instructions input means is outside of the user interface apparatus.

Rejections under Section 112

In the final Office Action dated August 25, 2005, Claims 3 and 14 were rejected under 35 U.S.C. § 112, second paragraph, as being indefinite. In regard to this rejection, the propriety of which is not conceded, Applicants submit the following remarks.

In regard to Claim 3, it is noted that that claim recites, as a structural or functional element, a means for receiving from a user, who has input a natural language instruction to arrive

at the current state of said machine, a request for an appropriate natural language instruction to reach the current state. Claim 3 also recites a further limitation of the generating means recited in independent Claim 1. It is noted that Claim 3 is parallel in structure to Claim 2.

In Claim 3, the recited receiving means is for receiving a request from a user. The user is one who has input a natural language instruction that caused the machine to arrive at its current state. The request is for an (e.g., another) appropriate natural language instruction that can (also) be used to reach the current state of the machine. The limitation of the generating means is that it is responsive to a received request for an appropriate natural language instruction (that can be used) to reach the current state of the machine. That is, the generating means is responsive to a received request such as the above-discussed request received by the receiving means.

Applicants submit that Claim 3 is clear as to the relationship between the claimed means and the terms highlighted in bold by the Examiner, and that Claim 3 complies with Section 112. While, as noted, Applicants do not concede the propriety of the rejection under Section 112, in order to further clarify Claim 3 for the Examiner, that claim has been amended.

In regard to Claim 14, it is noted that the machine recited therein includes the user interface apparatus of Claim 1 and instructions input means. It is noted that the user interface apparatus of Claim 1 is recited as “for use with a machine which can execute a number of user instructions to reach one of a plurality of possible machine states, wherein said user instructions can be input to said machine using at least natural language,” and that Claim 1 does not recite instructions input means as a claimed element. Accordingly, it is submitted that Claim 14 is consistent with Claim 1 and that the scope of Claim 14 relative to Claim 1 is clear. Claim 14 is

narrower than Claim 1 in that Claim 14 additionally recites instructions input means. Applicants submit that Claim 14 complies with Section 112.

In the final Office Action dated August 25, 2005, Claims 28 and 29 were rejected under 35 U.S.C. 112, first paragraph, as containing subject matter not described in the specification in such a way as to enable one skilled in the art to make and use the claimed invention. Specifically, the Examiner stated that the specification does not describe or provide any program code for programming. In regard to this rejection, the propriety of which is not conceded, Applicants submit the following remarks.

In regard to the subject matter of Claim 28, Applicants submit that, once the claimed processor and its operation (the method) as set forth in Claim 28 have been invented, it would be within the ability of one of ordinary skill in the art to implement that processor and its operation (the method) in program code.

Rejections under Section 103

In the final Office Action dated August 25, 2005, Claims 1-8, 10-22 and 24-29 were rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,415,257 (*Junqua et al.*) in view of U.S. Patent No. 6,400,996 (*Hoffberg et al.*), and Claims 9 and 23 were rejected under 35 U.S.C. § 103(a) as being unpatentable over *Junqua et al.* in view of *Hoffberg et al.* and further in view of “well known” prior art.

While not conceding the propriety of those rejections, the independent claims have been amended. Applicants submit that, for at least the reasons set forth below, the independent claims are patentable over the cited art.

Applicants' Independent Claims

Independent Claim 1 recites a user interface apparatus for use with a machine which can execute a number of user instructions to reach one of a plurality of possible machine states, wherein the user instructions can be input to the machine using at least natural language. The user interface apparatus comprises status means for obtaining a current state of the machine achieved by executing an instruction received from a user, generating means responsive to the obtained current state of the machine, for generating a natural language instruction which could have been executed by the machine to achieve the current state of the machine, irrespective of the instruction which has actually been executed to achieve the current state, and output means for outputting information to inform the user of the generated natural language instruction. Each of independent Claims 15, 28 and 30 recites features similar or identical to these features of Claim 1.

One feature recited in Claim 1 is generating means responsive to the obtained current state of the machine, for generating a natural language instruction which could have been executed by the machine to achieve the current state of the machine, irrespective of the instruction which has actually been executed to achieve the current state. Applicants submit that, for at least the reasons set forth below, nothing in the cited art would teach or suggest at least this feature recited in Claim 1.

The Prior Art

As explained in more detail in the previous Amendment (filed April 27, 2005), *Junqua et al.* relates to a system which recognizes a request input by a TV user in natural language and

then notifies that user of a television programme that satisfies the user's request. According to the *Junqua et al.* device, a user's spoken input is parsed by the natural language parser 24, which supplies a semantic representation of the user's input to the command module 30, which in turn commands the tuner 32 to select the appropriate channel if the user's input is a simple command such as "please switch to channel 7." Thus, in this simple scenario *Junqua et al.*'s system simply responds to a user's voice command. If, however, the user's input is more complex, for example the user wants to watch a movie starring a particular person, then the command module 30 accesses an electronic programme guide to determine whether there is a programme that meets the user's request and, if so, notifies the user of this by synthesised voiced response or by display of a suitable text prompt on the television screen. Thus, in the case of a more complex user input, the *Junqua et al.* system simply identifies programmes that may meet the user's spoken requirements and notifies the user of these programmes by synthesised voice response and/or by display of a suitable text prompt.

In neither case does the *Junqua et al.* system provide generating means responsive to the current state of the machine for generating a natural language instruction which could have been executed by the machine to achieve the current state of the machine, irrespective of the instruction which has actually been executed to achieve the current state.

Nothing in *Junqua et al.* hints at such a feature. Rather, *Junqua et al.* simply parses a user's voice input and, in the case of a simple command acts in accordance with the user's command and in the case of a more complex request, provides the user with details of programmes meeting the user's request. Even in this latter scenario, *Junqua et al.* does not

generate a natural language instruction which could have been executed to achieve the current state. Rather, *Junqua et al.* simply provides the user with programme information.

Hoffberg et al. teaches monitoring the status of an apparatus to determine the occurrence of various events to enable an action to be performed upon the occurrence of a given event. As set out in the previous Amendment and as is understood to be conceded by the Office Action, *Hoffberg et al.* neither teaches nor suggests the above-noted generating means claimed in Claim 1.

Accordingly, even if there were any incentive for a person skilled in the art to try to combine the adaptive pattern recognition base control system and method of *Hoffberg et al.* with the system for identifying and adapting a TV user profile by means of speech technology of *Junqua et al.*, that person would not be able to arrive at Applicants' claimed invention absent the hindsight available from reading the instant application, because neither of the cited documents teach or suggest the above-noted generating means claimed in Claim 1.

Response to Examiner's Arguments

I. Attacking the references individually

The Office Action (page 3) states

It is noted the applicant's arguments against the references individually (*sic*), but one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references.

In that regard, it appears that the Examiner may have misunderstood Applicants' arguments presented in the previous Amendment. In that Amendment, Applicants' argued that neither *Junqua et al.* nor *Hoffberg et al.* teach or suggest a certain claimed feature (namely, the claimed

generating means, as amended in that Amendment). Therefore, even if *Junqua et al.* and *Hoffberg et al.* were combined (assuming, for the sake of argument, that such combination were permissible), such combination would not yield Applicants' claimed invention, because the combination would lack the claimed feature (the claimed generating means). The combination would lack the claimed feature because neither of the documents making up the combination suggest the claimed feature. (The Examiner has not alleged, and Applicants have not found any basis for suggesting, that that claimed feature, even though absent from both individual references, could somehow be created by combining the two references.)

In the instant Amendment, Applicants again argue that neither *Junqua et al.* nor *Hoffberg et al.* teach or suggest a certain claimed feature (namely, the claimed generating means, as amended herein). Therefore, even if *Junqua et al.* and *Hoffberg et al.* were combined (assuming, for the sake of argument, that such combination were permissible), such combination would not yield Applicants' claimed invention, because the combination would lack the claimed generating means. The combination would lack the claimed feature because neither of the documents making up the combination suggest the claimed feature. (Nor is that claimed feature, even though absent from both individual references, somehow created by combining the two references.)

In that regard, it is noted that the Examiner does not allege that *Hoffberg et al.* suggests a generating means. While the Examiner does allege that *Junqua et al.* suggests a generating means, Applicants are arguing herein that this allegation is based upon a misunderstanding of Applicants' claimed invention and/or of *Junqua et al.* Therefore, even if the Examiner does not agree with Applicants' arguments herein, there is no basis for citing M.P.E.P.

2145.IV. (“One cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references.”). Applicants’ arguments are directed to the combination of references. It is argued that the combination does not suggest Applicants’ claimed invention, because a certain claimed feature is not taught or suggested by either of the documents making up the combination. (Nor is that claimed feature, even though absent from both individual references, somehow created by combining the two references.)

II. *The claimed “generating means” and “natural language instruction”*

At pages 3 and 8 of the Office Action, the Examiner cites specific portions of *Junqua et al.*’s invention alleged to correspond to the “generating means” and “natural language instruction” recited in Claim 1.

Specifically, regarding the recited “generating means,” the Examiner states that “combined blocks 24 [natural language parser] and 30 [command module] corresponds (*sic*) to the generating means.”

Regarding the recited “natural language instruction,” first, the Examiner states that the command that the command module gives to the tuner 32 in making channel selections corresponds to the natural language instruction (““this module, in turn, commands (corresponding to a natural language instruction) the tuner 32 (machine) in making channel selections . . .”). However, secondly, the Examiner indicates that the user’s request corresponds to the recited “natural language instruction” (““if the program guide includes a program that meets the user’s request (a natural language instruction input to the machine) . . .”). Finally, thirdly, the Examiner suggests that the program meeting the user’s request corresponds to the recited

“natural language instruction,” inasmuch as the Examiner states that the command module’s notifying the user (of a program meeting the user’s request) by synthesized voiced response and/or display by display of a suitable text prompt on the television screen 36 corresponds to the recitation concerning informing the user of the (generated) natural language instruction.

For at least the reasons set forth below, Applicants submit that the above-noted alleged correspondences between the claimed “generating means” and “natural language instruction,” on the one hand, and certain elements of *Junqua et al.*’s invention, on the other hand, do not hold. As a result, as explained below, *Junqua et al.* fails to teach or suggest “generating means responsive to the obtained current state of said machine, for generating a natural language instruction which could have been executed by said machine to achieve the current state of said machine, irrespective of the instruction which has actually been executed to achieve the current state” (wherein, as recited in the claimed combination, the “current state of the machine” is “achieved by executing an instruction received from a user,” and “the user” is “inform[ed . . .] of the generated natural language instruction”).

According to Applicants’ claimed invention, a machine can execute a number of different instructions to reach a given one of multiple possible machine states. The machine executes a certain instruction from a user to achieve a given state (the current state). The current state of the machine is obtained, or determined (e.g., by status means). Then, in response to the obtained current state of the machine, there is generated a natural language instruction which could have been executed by the machine to achieve the current state of the machine (but may not have been executed by the machine to achieve the current state of the machine). Then, information is output to inform the user of the generated natural language instruction. (In this

way, the user is informed of alternate instructions he can use to achieve the same machine state. He may thereby learn more efficient ways to reach that machine state.)

Thus, according to the claimed invention, the recited natural language instruction (1) is generated in response to the obtained current state of the machine, (2) could have been executed by the machine to achieve the current state of the machine, and (3) is output (in information) to inform the user of it. That is to say, the same natural language instruction, satisfies each of these three limitations.

In contrast, the cited aspects of *Junqua et al.*'s invention alleged to correspond to the recited natural language instruction fail to satisfy these three limitations.

As stated above, the Examiner cites three different aspects of *Junqua et al.*'s invention as corresponding to the recited natural language instruction.

First, the Examiner cites the command that the command module gives to the tuner 32 in making channel selections, as corresponding to the natural language instruction. However, this command (1) is not generated in response to the obtained current state of the machine. Rather, this command is generated in response to a user's command (or in response to a signal based on the user's command). Specifically, natural language parser 24 supplies, to the command module 30, a semantic representation of a user's input, and the command module 30 in turn commands the tuner 32 to make a given channel selection.

Further, this command (2) could not have been executed by the machine to achieve the current state of the machine. Rather, this command is precisely for achieving a state of the machine other than the current state. That is, the user desires the machine to be in a certain state (e.g., to set the machine to a certain channel, etc.), and the user inputs a command in order to

achieve that certain state. (If the current state of the machine were the state desired by the user, then the user would not need to input any command; the user inputs a command when he wants to put the machine into a state other than the current state.) Once the user inputs a command, the natural language parser 24 supplies a representation of the user's command to the command module 30 which, based on the representation, commands the tuner 32 to set the given channel, etc. Thus, the command, or a signal based thereon, is executed by the machine to put the machine into a certain state which the user has chosen, not to put the machine into (a state identical to) the current state.

Further, this command (3) is not output (in information) to inform the user of it. This command is given by the command module 30 to the tuner 32 to make it set the channel, etc. Thus, the command is given by one part of the machine to another part of the machine. The command remains an internal matter inside the machine. The command is not output to the user to inform the user of the command.

Second, the Examiner cites the user's request as corresponding to the recited natural language instruction. However, the user's request (1) is not generated in response to the obtained current state of the machine (the current state of the machine having been achieved by executing an instruction received from a user). Rather, the user's request is generated by the user himself in response to his desire.

Further, the user's request (2) could not have been executed by the machine to achieve the current state of the machine. As discussed above, the user's request is precisely a request to achieve a state of the machine other than the current state.

Further, the user's request (3) is not output (in information) to inform the user of it. The user's request is acted upon by the machine to achieve the state desired by the user, which state is articulated in the user's request. The machine does not output the user's request back to the user to inform the user of it. There would be no point for the machine to give back (output) to the user the user's request that the user input to the machine.

Third, the Examiner cites the program meeting the user's request as corresponding to the recited natural language instruction. However, the program meeting the user's request (1) is not generated in response to the obtained current state of the machine. Rather, the program meeting the user's request is generated in response to the user's request.

Further, the program meeting the user's request (2) could not have been executed by the machine to achieve the current state of the machine. The program meeting the user's request is not the kind of thing that can be executed by a machine to achieve a machine state, and hence it could not have been executed by the machine to achieve the current state of the machine. (Even if the program were deemed to be executable by a machine to achieve a machine state, the program would not be executable to achieve the current state, since the program satisfies the user's request to achieve a state other than the current state, as discussed above.)

It may be argued that the program meeting the user's request (3) is output (in information) to inform the user of it.

Thus, the Office Action cites three different elements of *Junqua et al.*'s invention as corresponding to the recited natural language instruction, and the Office Action appears to allege that each one satisfies at least one (but not all) of the above-discussed three limitations satisfied by the natural language instruction recited in Claim 1. However, Applicants' Claim 1 recites a

single natural language instruction that satisfies all three of those limitations. The Office Action has not shown any single element in *Junqua et al.*'s invention corresponding to the recited natural language instruction that satisfies those three limitations. (Nor has the Office Action shown multiple elements in *Junqua et al.*'s invention corresponding to the recited natural language instruction, which together satisfy those three limitations.) Of the three elements of *Junqua et al.*'s invention cited by the Office Action as corresponding to the recited natural language instruction, none of them satisfies any of the three limitations, except that the third of them discussed above may satisfy one of the three limitations. Since no single element (nor even any combination of multiple elements) has been found in *Junqua et al.* that corresponds to the natural language instruction recited in Claim 1 and satisfies the three claimed limitations thereof, *Junqua et al.* is not seen to teach or suggest the recited natural language instruction as set forth in the claimed combination. At least because *Junqua et al.* is not seen to suggest the recited natural language instruction, that document is not seen to suggest "generating means responsive to the obtained current state of said machine, for generating a natural language instruction which could have been executed by said machine to achieve the current state of said machine, irrespective of the instruction which has actually been executed to achieve the current state," as recited in Claim 1.

In view of the above-discussed differences between the natural language instruction of Applicants' claims and the alleged corresponding elements of *Junqua et al.*'s invention, *Junqua et al.*'s combined blocks 24 [natural language parser] and 30 [command module] are not seen to perform in the manner (as claimed) in which Applicants' claimed generating means does. Nor

has anything else been found in *Junqua et al.* that would suggest the claimed generating means that performs as claimed.

Nothing in *Hoffberg et al.* has been alleged by the Examiner, nor has anything in that document been found by Applicants, that would remedy the above-discussed deficiencies of *Junqua et al.* with respect to Applicants' claimed invention.

Since neither *Junqua et al.* nor *Hoffberg et al.*, whether taken singly or in combination (even assuming, for the sake of argument, that such combination were permissible), contains all of the elements of independent Claim 1, that claim is believed allowable over the cited art. Since each of independent Claims 15, 28 and 30 recites features similar or identical to the above-discussed features of Claim 1, those claims are believed allowable over the cited art for the same reasons.

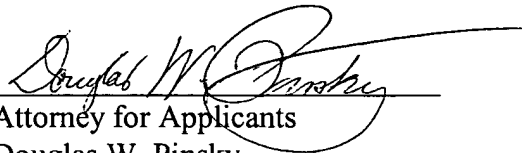
A review of the other art of record has failed to reveal anything which, in Applicants' opinion, would remedy the deficiencies of the art discussed above, as references against the independent claims herein. Those claims are therefore believed patentable over the art of record.

The other claims in this application are each dependent from one or another of the independent claims discussed above and are therefore believed patentable for the same reasons. Since each dependent claim is also deemed to define an additional aspect of the invention, however, the individual reconsideration of the patentability of each on its own merits is respectfully requested.

In view of the foregoing amendments and remarks, Applicant respectfully requests favorable reconsideration and early passage to issue of the present application.

Applicants' undersigned attorney may be reached in our Washington, D.C. office by telephone at (202) 530-1010. All correspondence should continue to be directed to our below-listed address.

Respectfully submitted,



Attorney for Applicants
Douglas W. Pinsky
Registration No. 46,994

FITZPATRICK, CELLA, HARPER & SCINTO
30 Rockefeller Plaza
New York, New York 10112-3801
Facsimile: (212) 218-2200
DWP/klm

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